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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,173	07/24/2003	Jeyascelan Raju	MPI98-105P1RCP2DV1M	1880

30405 7590 09/22/2004

MILLENNIUM PHARMACEUTICALS, INC.
40 Landsdowne Street
CAMBRIDGE, MA 02139

EXAMINER	
MONSHIPOURI, MARYAM	

ART UNIT	PAPER NUMBER
1652	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/626,173	RAJU, JEYASEELAN	
	Examiner	Art Unit	
	Maryam Monshipouri	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/24/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *sequence alignment*.

Applicant's response to restriction requirement filed 6/17/2004 is acknowledged. Applicant elected Group I invention directed to claims 1-12 (methods of use of SEQ ID NO:2) without traverse.

DETAILED ACTION

Claims 1-12 are under examination on the merits.

Information Disclosure statement

In pages 4-9 of the IDS filed 7/24/2003 applicant is citing a series of Genbank accession Numbers and Blast searches with no associated date of entry or submission, and are thereby incomplete. The examiner of record searched for said references in parent cases but unfortunately was unsuccessful. If applicant is interested in incorporating said references in his/her IDS, it is requested that he/she resubmit said references with corresponding dates or possibly filling the corresponding date of each reference in the 1449 form in response to this office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed,

had possession of the claimed invention. In pages 16-17 of the specification, it is noted that the applicants have deposited the organisms (see claim 1(a)) under the terms of Budapest treaty but there is no indication in the specification as to the public availability. Since the deposit was made under the terms of the Budapest Treaty, then an affidavit or declaration by applicants, or a statement by an attorney of record over his or her signature and registration number, stating that the strain will be irrevocably and without restriction or condition released to the public upon the issuance of the patent, would satisfy the deposit requirement made herein. Claims 2-12 are merely rejected for depending from rejected claim 1.

Claims 1-2, and 7-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The examiner looked for support of hybridization conditions recited in claim 1(b) in the specification and could not find any. Hence, for examination purposes said hybridization and wash conditions are considered to be **new matter**. Applicant is advised to either refer the examiner to exact location wherein said hybridization and wash conditions re recited in the specification or possibly delete said conditions from claim 1. Claims 2-3 and 7-12 are merely rejected for depending from a rejected base claim.

Claims 1-2 and 6-12 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for methods of identifying kinase activity of SEQ

ID NO:2 and its claimed variants, does not reasonably provide enablement for any activity of said products beyond kinase activity. In claim 1 applicant does not specify the exact activity (activities) of polypeptides which are used in claimed methods.

The criteria for undue experimentation, summarized in *re Wands*, 8, USPQ2n 1400 (Fed. Cir. 1988) are: 1) the quantity of experimentation necessary, 2) the amount of direction or guidance presented, 3) the presence and absence of working examples, 4) the nature of the invention, 5) the state of prior art, 6) the relative skill of those in the art, 7) the predictability or unpredictability of the art, and 8) the breadth of the claims.

The specification fails to teach any other assay methods beyond those of a kinase. No examples of assay methods of other SEQ ID NO:2 activities are provided either. Prior art is unpredictable about how to assay for activities beyond kinase activity of claimed polypeptides, such that could be exploited in claimed invention.

Therefore due to lack of sufficient teachings and examples in the specification and due to unpredictability of prior art as how to assay for other activities of claimed polypeptides one of skill in the art has to go through he burden of undue experimentation in order to screen for modulators of other activities of claimed polypeptides and as such the claim goes beyond the scope of the specification. Claims 2, and 6-12 are merely rejected for depending from rejected base claim 1.

Claims 1, 3-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the

invention. In Claim 1(e) applicant is claiming a methods of identifying modulators of "activity" of polypeptides consisting of 25 consecutive amino acids of SEQ ID NO:2.

The criteria for undue experimentation is cited above. The specification does not teach about activities of polypeptides consisting of 25 amino acids of SEQ ID NO:2. No examples of such activities are provided either. Prior art is totally unpredictable about what activities a polypeptides of 25 amino acids must have.

Therefore, due to lack of sufficient teachings and examples in the specification and due to unpredictability of prior art as to how to screen for activities of polypeptides consisting of at least 25 amino acids of any polypeptide including SEQ ID NO:2 of this invention one of skill in the art has to go thorough the burden of undue experimentation in order to practice the method as claimed. Claims 3-12 are merely rejected for depending from a rejected base claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Plowman et al., (WO200073469, 12/2000). As mentioned above, the examiner could not find support for the methods of use of polypeptides as claimed in claim 1(b) in the parent applications. Hence, the earliest filing date that current invention can benefit from is 7/24/2003 which is filing date of instant application. Based on this date Plowman

teaches methods of identifying modulators (see pages 56 and 68 of the specification) of its kinase polypeptides that have 100% identity to SEQ ID NO:2 and are encoded by DNA molecules that can hybridize to SEQ ID NO:3 under conditions recited in claim 1(b) and 3. Since polypeptides of Plowman display 100% identity to those used in claim 1(b) Plowman methods inherently anticipate claims 4-12 of this invention.

No claims are allowed.

Allowable Subject Matter

SEQ ID NO:2 is free of prior art. Further the prior art does not teach or suggest preparing such specifically claimed polypeptide. Hence said polypeptide is non-obvious. Since claimed amino acid sequence is both novel and non-obvious methods of use of said polypeptide as specifically claimed is also novel and non-obvious.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maryam Monshipouri whose telephone number is (571) 272-0932. The examiner can normally be reached on 7:00 a.m to 4:30 p.m. except for alternate Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnanthapu Achutamurthy can be reached on (571) 272-0928. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maryam Monshipouri Ph.D.

Primary Examiner

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Qy       1981 GGCGAAATTCCATTCGCTCATCTCAAGCCAGCGGCTGCGGCAGCAGACATGGCTTACCAC 2040
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1981 GGCGAAATTCCATTCGCTCATCTCAAGCCAGCGGCTGCGGCAGCAGACATGGCTTACCAC 2040

Qy       2041 CACATCAGACCTCCCATTGGCTATTCCATTCCCAAGCCCATATCATCTCTGCTGATACGA 2100
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2041 CACATCAGACCTCCCATTGGCTATTCCATTCCCAAGCCCATATCATCTCTGCTGATACGA 2100

Qy       2101 GGGTGGAACGCATGTCCTGAAGGAAGACCCGAATTTTCTGAAGTTGTCATGAAGTTAGAA 2160
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2101 GGGTGGAACGCATGTCCTGAAGGAAGACCCGAATTTTCTGAAGTTGTCATGAAGTTAGAA 2160

Qy       2161 GAGTGTCTCTGCAACATTGAGCTGATGTCTCCTGCATCAAGTAACAGCAGTGGGTCTCTC 2220
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2161 GAGTGTCTCTGCAACATTGAGCTGATGTCTCCTGCATCAAGTAACAGCAGTGGGTCTCTC 2220

Qy       2221 TCACCTTCTTCTTCTTCTGATTGCCTGGTGAACCGGGGAGGACCTGGCCGGAGTCATGTG 2280
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2221 TCACCTTCTTCTTCTTCTGATTGCCTGGTGAACCGGGGAGGACCTGGCCGGAGTCATGTG 2280

Qy       2281 GCAGCATTAAGAAGTCGTTTCGAATTGGAATATGCTCTAAATGCAAGGTCCTATGCTGCT 2340
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2281 GCAGCATTAAGAAGTCGTTTCGAATTGGAATATGCTCTAAATGCAAGGTCCTATGCTGCT 2340

Qy       2341 TTGTCCCAAAGTGCTGGACAATATTCCTCTCAAGGTCTGTCTTTGGAGGAGATGAAAAGA 2400
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2341 TTGTCCCAAAGTGCTGGACAATATTCCTCTCAAGGTCTGTCTTTGGAGGAGATGAAAAGA 2400

Qy       2401 AGTCTTCAATACACACCCATTGACAAATATGGCTATGTATCCGATCCCATGAGCTCAATG 2460
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2401 AGTCTTCAATACACACCCATTGACAAATATGGCTATGTATCCGATCCCATGAGCTCAATG 2460

Qy       2461 CATTTTCATTCTTGCCGAAATAGTAGCAGCTTTGAGGACAGCAGC 2505
             |||||||||||||||||||||||||||||||||||||||||||||
Db       2461 CATTTTCATTCTTGCCGAAATAGTAGCAGCTTTGAGGACAGCAGC 2505
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RESULT 2
AAF44702
ID AAF44702 standard; cDNA; 2508 BP.
XX
AC AAF44702;
XX
DT 27-MAR-2001 (first entry)
XX
DE Novel protein kinase cDNA, SEQ ID NO: 83.
XX
KW Human; mouse; protein kinase; antiarthritic; antisclerotic; osteopathic;
KW immunosuppressive; cardiant; renal; antiinflammatory; antiasthmatic;
KW dermatological; antidiabetic; antiinfertility; gene therapy; vaccine;
KW immune disorder; cardiovascular disease; neurodegenerative disease;
KW cancer; autoimmune disorder; stroke; inflammatory bowel disease;
KW inflammatory pelvic disease; multiple sclerosis; psoriasis; ss.
XX
OS Homo sapiens.
XX
PN WO200073469-A2.
XX
PD 07-DEC-2000.
XX
PF 26-MAY-2000; 2000WO-US014842.
XX
PR 28-MAY-1999; 99US-0136503P.
XX
PA (SUGE-) SUGEN INC.
XX
PI Plowman GD, Martinez R, Whyte D, Sudersanam S;
XX
DR WPI; 2001-032161/04.
DR P-PSDB; AAB65674.
XX
PT Nucleic acids encoding kinase polypeptides, useful for diagnosing and
PT treating immune-related diseases and disorders, cardiovascular disease,
PT neurodegenerative diseases and/or cancers.
XX
PS Disclosure; Fig 2; 310pp; English.
XX
CC The present sequence encodes a novel protein kinase. The nucleic acids
CC and the protein kinases they encode may be used in the treatment and
CC diagnosis of diseases associated with inappropriate kinase expression
CC such as immune-related diseases and disorders, cardiovascular disease,
CC neurodegenerative diseases and/or cancers. The nucleic acids and
CC complementary sequences may also be used as DNA probes in diagnostic
CC assays. The kinase polypeptides may be used as antigens in the production
CC of antibodies of kinase expression and activity. Anti-kinase antibodies
CC and kinase antagonists may also be used to down regulate kinase
CC expression and activity. Diseases related to kinase expression and
CC activity include rheumatoid arthritis, atherosclerosis, autoimmune
CC disorders, complications of organ transplantation, myocardial infarction,
CC immune disorders, cardiomyopathies, strokes, renal failure, oxidative-
CC stress related disorders, chronic inflammatory bowel disease, chronic
CC inflammatory pelvic disease, multiple sclerosis, asthma, osteoarthritis,
CC psoriasis, rhinitis, autoimmunity, diabetes, cancers and reproductive
CC disorders
XX
SQ Sequence 2508 BP; 722 A; 532 C; 555 G; 699 T; 0 U; 0 Other;

Query Match 100.0%; Score 2505; DB 4; Length 2508;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 2505; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Qy          1 ATGGGAAATTATAAATCTAGACCAACCCAAACTTGTACTGATGAATGGAAGAAAAAAGTC 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 ATGGGAAATTATAAATCTAGACCAACCCAAACTTGTACTGATGAATGGAAGAAAAAAGTC 60

Qy         61 AGTGAATCATATGTTATCACAATAGAAAGATTAGAAGATGACCTGCAGATCAAGGAAAAA 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 AGTGAATCATATGTTATCACAATAGAAAGATTAGAAGATGACCTGCAGATCAAGGAAAAA 120

Qy        121 GAACTGACAGAACTAAGGAATATATTTGGCTCTGATGAAGCCTTCAGTAAAGTCAATTTA 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 GAACTGACAGAACTAAGGAATATATTTGGCTCTGATGAAGCCTTCAGTAAAGTCAATTTA 180

Qy        181 AATTACCGCACTGAAAATGGGCTGTCTCTACTTCATTTATGTTGCATTTGTGGAGGCAAG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy        241 AAATCACATATTCGAACTCTTATGTTGAAAGGGCTCCGCCCATCTCGACTGACAAGAAAT 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 AAATCACATATTCGAACTCTTATGTTGAAAGGGCTCCGCCCATCTCGACTGACAAGAAAT 300

Qy        301 GGATTTACAGCCTTGCATTTAGCAGTTTACAAGGATAATGCAGAATTGATCACTTCTCTG 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 GGATTTACAGCCTTGCATTTAGCAGTTTACAAGGATAATGCAGAATTGATCACTTCTCTG 360

Qy        361 CTTCACAGTGGAGCTGATATACAGCAGGTTGGATACGGTGGCCTCACTGCCCTCCATATT 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 CTTCACAGTGGAGCTGATATACAGCAGGTTGGATACGGTGGCCTCACTGCCCTCCATATT 420

Qy        421 GCTACAATAGCTGGCCACCTAGAGGCTGCTGATGTGCTGTTGCAACATGGAGCTAATGTC 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 GCTACAATAGCTGGCCACCTAGAGGCTGCTGATGTGCTGTTGCAACATGGAGCTAATGTC 480

Qy        481 AATATTCAAGATGCAGTTTTTTTCACTCCATTGCATATTGCAGCGTACTATGGACATGAA 540
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 AATATTCAAGATGCAGTTTTTTTCACTCCATTGCATATTGCAGCGTACTATGGACATGAA 540

Qy        541 CAGGTAACTCGCCTTCTTTTGAAATTTGGTGCTGATGTAAATGTAAGTGGTGAAGTTGGA 600
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        541 CAGGTAACTCGCCTTCTTTTGAAATTTGGTGCTGATGTAAATGTAAGTGGTGAAGTTGGA 600

Qy        601 GATAGACCCCTCCACCTAGCATCTGCAAAAGGATTCTTGAATATTGCAAAACTCTTGATG 660
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        601 GATAGACCCCTCCACCTAGCATCTGCAAAAGGATTCTTGAATATTGCAAAACTCTTGATG 660

Qy        661 GAAGAAGGCAGCAAAGCAGATGTGAATGCTCAAGATAATGAAGACCATGTCCCACTCCAT 720
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Db        661 GAAGAAGGCAGCAAAGCAGATGTGAATGCTCAAGATAATGAAGACCATGTCCCACTCCAT 720
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Db        721 TTCTGTTCTCGATTTGGACACCATGATATAGTTAAGTATCTGCTGCAAAGTGATTTGGAA 780
Qy        781 GTTCAACCTCATGTTGTTAATATCTATGGAGATACCCCCTTACACCTGGCATGCTACAAT 840
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Qy        841 GGCAAATTTGAAGTTGCCAAGGAAATCATCCAAATATCAGGAACAGAAAGTCTGACTAAG 900
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Qy        901 GAAAACATCTTCAGTGAAACAGCTTTTCATAGTGCTTGTACCTATGGCAAGAGCATTGAC 960
Db        901 GAAAACATCTTCAGTGAAACAGCTTTTCATAGTGCTTGTACCTATGGCAAGAGCATTGAC 960
Qy        961 CTAGTCAAATTTCTTCTTGATCAGAATGTCATAAACATCAACCACCAAGGAAGGGATGGG 1020
Db        961 CTAGTCAAATTTCTTCTTGATCAGAATGTCATAAACATCAACCACCAAGGAAGGGATGGG 1020
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Db       1021 CACACTGGATTACACTCTGCTTGCTACCACGGTCACATTCGCCTGGTTCAGTTCTTACTG 1080
Qy       1081 GATAATGGAGCTGATATGAATCTAGTGGCTTGTGATCCCAGCAGGTCTAGTGGTGAAAAA 1140
Db       1081 GATAATGGAGCTGATATGAATCTAGTGGCTTGTGATCCCAGCAGGTCTAGTGGTGAAAAA 1140
Qy       1141 GATGAGCAGACATGTTTGATGTGGGCTTATGAAAAAGGGCATGATGCCATTGTCACACTC 1200
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Qy       1201 CTGAAGCATTATAAGAGACCACAAGATGAATTGCCCTGTAATGAATATTCTCAGCCTGGA 1260
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Qy       1501 TCAGATGTGGATATGTTTTGCCGAGAGGTGTCCATTCTCTGCCAGCTCAATCATCCCTGC 1560
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Qy       1561 GTAATTCAGTTTGTGGGTGCTTGCTTGAATGATCCCAGCCAGTTTGCCATTGTCACTCAA 1620
Db       1561 GTAATTCAGTTTGTGGGTGCTTGCTTGAATGATCCCAGCCAGTTTGCCATTGTCACTCAA 1620
Qy       1621 TACATATCAGGGGGTTCTCTGTTCTCCCTCCTTCATGAGCAGAAGAGGATTCTTGATTTG 1680
Db       1621 TACATATCAGGGGGTTCTCTGTTCTCCCTCCTTCATGAGCAGAAGAGGATTCTTGATTTG 1680
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Db       1681 CAGTCTAAATTAATTATTGCAGTAGATGTTGCCAAAGGCATGGAGTACCTTCACAACCTG 1740
Qy       1741 ACACAGCCAATTATACATCGTGACTTGAACAGTCACAATATTCTTCTCTATGAGGATGGG 1800
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Db       1741 ACACAGCCAATTATACATCGTGACTTGAACAGTCACAATATTCTTCTCTATGAGGATGGG 1800
Qy       1801 CATGCTGTGGTGGCAGATTTTGGAGAATCAAGATTTCTACAGTCTCTGGATGAAGACAAC 1860
Db       1801 CATGCTGTGGTGGCAGATTTTGGAGAATCAAGATTTCTACAGTCTCTGGATGAAGACAAC 1860
Qy       1861 ATGACAAAACAACCTGGGAACCTCCGTTGGATGGCTCCTGAGGTGTTCACGCAGTGCACT 1920
Db       1861 ATGACAAAACAACCTGGGAACCTCCGTTGGATGGCTCCTGAGGTGTTCACGCAGTGCACT 1920
Qy       1921 CGGTACACCATCAAAGCAGATGTCTTCAGCTATGCTCTGTGTCTGTGGGAAATTCTCACT 1980
Db       1921 CGGTACACCATCAAAGCAGATGTCTTCAGCTATGCTCTGTGTCTGTGGGAAATTCTCACT 1980
Qy       1981 GGCGAAATTCCATTCGCTCATCTCAAGCCAGCGGCTGCGGCAGCAGACATGGCTTACCAC 2040
Db       1981 GGCGAAATTCCATTCGCTCATCTCAAGCCAGCGGCTGCGGCAGCAGACATGGCTTACCAC 2040
Qy       2041 CACATCAGACCTCCCATTGGCTATTCCATTCCCAAGCCCATATCATCTCTGCTGATACGA 2100
Db       2041 CACATCAGACCTCCCATTGGCTATTCCATTCCCAAGCCCATATCATCTCTGCTGATACGA 2100
Qy       2101 GGGTGGAACGCATGTCCTGAAGGAAGACCCGAATTTTCTGAAGTTGTCATGAAGTTAGAA 2160
Db       2101 GGGTGGAACGCATGTCCTGAAGGAAGACCCGAATTTTCTGAAGTTGTCATGAAGTTAGAA 2160
Qy       2161 GAGTGTCTCTGCAACATTGAGCTGATGTCTCCTGCATCAAGTAACAGCAGTGGGTCTCTC 2220
Db       2161 GAGTGTCTCTGCAACATTGAGCTGATGTCTCCTGCATCAAGTAACAGCAGTGGGTCTCTC 2220
Qy       2221 TCACCTTCTTCTTCTTCTGATTGCCTGGTGAACCGGGGAGGACCTGGCCGGAGTCATGTG 2280
Db       2221 TCACCTTCTTCTTCTTCTGATTGCCTGGTGAACCGGGGAGGACCTGGCCGGAGTCATGTG 2280
Qy       2281 GCAGCATTAAGAAGTCGTTTCGAATTGGAATATGCTCTAAATGCAAGGTCCTATGCTGCT 2340
Db       2281 GCAGCATTAAGAAGTCGTTTCGAATTGGAATATGCTCTAAATGCAAGGTCCTATGCTGCT 2340
Qy       2341 TTGTCCCAAAGTGCTGGACAATATTCCTCTCAAGGTCTGTCTTTGGAGGAGATGAAAAGA 2400
Db       2341 TTGTCCCAAAGTGCTGGACAATATTCCTCTCAAGGTCTGTCTTTGGAGGAGATGAAAAGA 2400
Qy       2401 AGTCTTCAATACACACCCATTGACAAATATGGCTATGTATCCGATCCCATGAGCTCAATG 2460
Db       2401 AGTCTTCAATACACACCCATTGACAAATATGGCTATGTATCCGATCCCATGAGCTCAATG 2460
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RESULT 3
AAA47606
ID   AAA47606 standard; cDNA; 3025 BP.
XX
AC   AAA47606;
XX
DT   20-OCT-2000  (first entry)
XX
DE   Human CARK (Cardiac related Ankyrin-Repeat Protein Kinase) cDNA.
XX
KW   Cardiac related ankyrin repeat protein kinase; CARK; cytoskeleton;
KW   cardiac cell growth factor receptor; cell differentiation; modulator;
KW   regulator; detection; cellular proliferation; cardiovascular disorder;
KW   heart failure; hypertension; cancer; sarcoma; ds.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   CDS             48. .2555
FT                   /*tag=  a
FT                   /product= "Human CARK"
XX
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